Montana Laboratory Sentinel

Updates from the MT Laboratory Services Bureau
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Fresh fruit and vegetables as vehicles for the transmission of human pathogens

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Abstract

Summary: Much research into food-borne human pathogens has focused on transmission from foods of animal origin. However, recent investigations have identified fruits and vegetables are the source of many disease outbreaks. Now believed to be a much larger contributor to produce-associated outbreaks than previously reported, norovirus outbreaks are commonly caused by contamination of foods from hands of infected workers. Although infections with Shiga toxin-producing *E. coli* O157 have been linked to beef more often than to any other food product, severe outbreaks have been traced to consumption of contaminated radish sprouts and pre-packaged spinach. Similarly, while infections with Salmonella have mainly been linked to consumption of foods of animal origin, many outbreaks have been traced to contaminated fresh produce. *E. coli* O157 binds to lettuce leaves by alternative mechanisms involving the filamentous type III secretions system, flagella and the pilus curli. Association of Salmonella with fresh produce appears to be serovar-specific involving flagella, curli, cellulose, and O antigen capsule. A better understanding of plant, microbiological, environmental, processing and food handling factors that facilitate contamination will allow development of evidence-based policies, procedures and technologies aimed at reducing the risk of contamination of fresh produce.

http://www.ncbi.nlm.nih.gov/pubmed/20636374

WANTED: *CAMPYLOBACTER SPP.* ISOLATES:

Montana Public Health Laboratory (MTPHL) was recently granted funding to implement *Campylobacter spp.* testing by pulsed field gel electrophoresis (PFGE). PFGE is used to distinguish strains of organisms at the DNA level. These DNA "fingerprints," or patterns, can be matched locally, and then submitted electronically to a dynamic CDC database, PulseNet, which allows for rapid comparison of patterns across the country. This testing will greatly expand surveillance capacity of *Campylobacter spp.* within Montana. We hope to have this testing up and running soon, so please help us in our surveillance efforts by submitting *Campylobacter spp.* isolates or positive Campy specimens to MTPHL. These will be tested free of charge.

Rapid Pulsed-Field Gel Electrophoresis Protocol for Subtyping of *Campylobacter jejuni*

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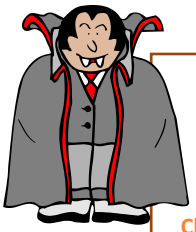
Campylobacter jejuni is the most common bacterial cause of diarrheal illness in the United States (1). It is estimated that *Campylobacter* infections affect over 2.5 million persons, with 80% of infections attributable to food-borne transmission (10). The majority of *Campylobacter* infections occur as sporadic events and not as part of outbreaks. Cases of campylobacteriosis are often associated with handling raw poultry or eating raw or undercooked poultry meat, though large outbreaks have most often been associated with the consumption of unpasteurized milk or contaminated water. Strain differentiation is necessary for the identification of sources of contamination and determination of routes of transmission; this could in turn enable us to more accurately detect outbreaks and limit the spread of *Campylobacter* infections.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC88044/



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The current issue of the Communicable Disease Epidemiology Program Weekly Update for MMWR reporting week 41 can be found at: http://www.dphhs.mt.gov/PHSD/epidemiology/documents/CDWeeklyUpdateWk41.pdf. This issue covers the Haitian Cholera Outbreak – What to do with those experiencing diarrheal illness; Halloween Health – Take advantage of the holidays to spread disease prevention messages! Influenza: prevention, diagnoses, and surveillance during the 2010 – 2011 influenza season

The Montana Communicable Disease Epidemiology Program can be reached 24/7/365 (406)444.0273 or http://cdepi.hhs.mt.gov